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**THE DEVELOPMENT OF SPANISH AIRPOWER DOCTRINE  
(1910-1936)**

by

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## *Contents*

	<i>Page</i>
DISCLAIMER .....	ii
PREFACE .....	iv
ABSTRACT .....	vi
INTRODUCTION .....	1
HISTORICAL CONTEXT .....	4
THE DECADE OF THE 1910S: THE BEGINNINGS .....	9
Organization and Force Structure .....	11
THE DECADE OF THE 1920S: THE FOUNDATION .....	15
The Roots of Spanish Air Doctrine .....	18
Organizational Evolution .....	20
THE DECADE OF THE 1930S: DOCTRINAL MATURITY .....	23
Organizational Process: Virtual Independence .....	26
CONCLUSION .....	32
APPENDIX A: EL DOMINIO DEL AIRE Y LA DEFENSA NACIONAL .....	35
APPENDIX B: REVISTA DE AERONÁUTICA (1932-1936) .....	39
BIBLIOGRAPHY .....	46

## *Preface*

In general, it can be said that airpower doctrine evolution has seldom received appropriate attention in Spain. Although the subject is tackled in a few professional documents and works, it usually receives only informal consideration. Actually, very few people in the Spanish military know how airpower doctrine evolved in the first years of Spanish aviation and why so much time had to pass before the current Air Force was created. This has been the reason to undertake this research project. In the process, many original documents, books, and reviews have been consulted as well as secondary sources that had dealt with the subject previously. The result has been to discover for myself that Spain was able to articulate a solid airpower doctrine in those years, based on experiences and ideas obtained at home and abroad. With this paper, I attempt to offer a new approach to the historical evolution of Spanish air power, a study exclusively focused on ideas and initiatives that contributed to build airpower doctrine and to organize the current *Ejercito del Aire*.

I would like to thank my family for their support in preparing this paper. Without their help in locating books and documents in Spain, and without their understanding and encouragement during the time employed in reading for, outlining, drafting and finally writing this paper, I would not have found this project so exciting. As well, I would like to express my appreciation for the advice and proofreading given to me by my research adviser, Dr. Kathleen Mahoney-Norris. Her cooperation has been essential for writing

this paper in a clear style and a coherent format. Finally, I would like to thank the ACSC faculty, with a special mention to Dr. William Dean, for giving me the chance to learn more about this kind of research project and specifically about my own airpower history through preparing this paper. It has been a pleasure for me to do it and I hope that I can contribute to stimulate others to explore this subject to a greater extent.

### ***Abstract***

The development of Spanish airpower doctrine has not been specifically addressed in previous works or papers. The objective of this paper is to provide the reader with a comprehensive analysis of such a process in order to understand what were the reasons that delayed the independence of the Spanish Air Force for so long. In describing this process, this paper focus on ideas, experiences, and organizational regulations that marked the development of Spanish airpower since its birth (1910) to 1936, just before the Spanish Civil War took place.

The methodology employed in this research includes consultation and analysis of both primary and secondary sources. As primary sources, documents and official regulations from the Spanish Air Force Historical Archive, in Madrid, Spain, have been consulted, mostly related to organizational steps in the evolutionary development of the air force. As well, books and manuals written through those years have been examined, all of them in Spanish (but found in the AU Library on Maxwell AFB). In addition, a set of periodical publications, also in Spanish, have been used to extract many of the doctrinal concepts and ideas demonstrated in the last years of this period. Books written in English have been used as secondary sources to better understand the historical context in which airpower evolved. Furthermore, several works in Spanish dealing with the historical analysis of Spanish aviation have been employed to fill some gaps found in the research.

The outcome of this research project can be summarized as confirming the existence of a solid airpower doctrine for Spanish military aviation before the outbreak of the Civil War. As well, the chronological description of the evolution of this airpower although allows a better understanding of how the participation of aircraft in colonial warfare in Africa generated the first ideas and experiences about airpower employment. Further, lessons learned in World War I and new technological developments would be added to begin building a solid doctrinal foundation, in which the contribution of figures like Kindelan and Echagüe would be decisive. In the 1930s, Spanish airpower doctrine would reach its maturity, with a sound proposition on how airpower could contribute to national strategy, a clear definition of what should be the force structure of air power, and the sharp delineation of how to organize the air force as an independent service.

Nevertheless, key contextual factors, especially the lack of political and social stability and the economic and technological underdevelopment of Spain, would delay indefinitely the achievement of an independent air force. As in many other countries, the process of organizing the air service was affected by different factors. In its first years, prudence was the tonic for Spanish airpower until a better understanding of the possibilities of employment and better technology was achieved. The experiences of World War I would lead to the first attempts to obtain a more decisive role for airpower and the Spanish air service would advance its degree of independence, but always inside the Army. In the 1930s, many initiatives were undertaken to concede greater independence to the air service, but interservice rivalry and lack of political and economic support would slow down the process. The Air Force had to wait until the

outbreak of the Spanish Civil War to finally attain its independence, although it already had a solid foundation in its well-defined airpower doctrine.

## **Chapter 1**

### **Introduction**

Airpower doctrine can be defined as a set of principles and concepts that express how best an air force should be organized and employed. All doctrine should be the result of applying critical thinking in analyzing theory and practice continuously and in understanding how both are affected by external or contextual factors. The purpose of this paper is to summarize how Spanish airpower doctrine evolved since the birth of military aviation until 1936, the year in which the Spanish Civil War commenced. While the historical development of the Spanish air service in those years has been tackled in different books, there is no specific study about how its doctrine evolved. In fact, very few people have paid attention to this matter in Spain, or abroad. Some efforts were noted in 1988, when historical research was done to elaborate the most complete history of the Spanish Air Force. In that year, other articles were published in a monographic issue of *Revista de Aeronaútica y Astronáutica* to commemorate the 75<sup>th</sup> anniversary of military aviation. However, those publications do not offer a dedicated approach on how airpower doctrine was built and evolved. Therefore, the aim of this paper is to introduce, in a single study, the development of this doctrine by describing contextual factors, ideas, experiences, and practices that contributed to articulate it.

The historical context in which Spanish airpower emerged and grew was too complex to warrant a smooth path of doctrinal development. Lack of political leadership or stability, economic and technological underdevelopment, and an unsupportive social context made it impossible for Spain to build a strong national airpower capability. While in other countries civilian initiatives pushed the air enterprise, in Spain the military would have to undertake this task. A colonial war in Africa would serve to bring airplanes into the fight and Spain would begin developing an airpower doctrine founded more in its practical use than in its theoretical potential. Nevertheless, Spanish pilots and military leadership would be able to apply experiences gained and new technology to increase the effectiveness of their airpower in the 1920s, when a clearer doctrine began to be generated. Although political events would interfere with the organizational process, in the 1930s doctrinal thinking had taken root among many military aviators and a sound doctrinal body was promulgated in different books, publications, and official documents. Unfortunately, airpower advocates would never see their objective of an independent service realized. Political, economic, and social support never existed, and interservice rivalry would prevent their dream coming true. However, those air enthusiasts left behind an important legacy that must be recognized. They must receive credit for being able to articulate a solid foundation for airpower doctrine in which the current Spanish Air Force finds its doctrinal roots.

Many original documents and publications reflecting the thoughts of those advocates, as well as the Spanish Air Force historical archive, have been consulted to produce this paper. Although previous works, such as *Historia de la Aeronaútica*, have used almost the same sources, this study introduces the analysis of some publications that

had never been noticed before. For instance, the AU Library on Maxwell AFB still conserves official manuals issued by the Spanish air service in the 1930s, and some of those archival documents have served to better highlight the influence of foreign countries in the development of Spanish airpower. However, the originality of this work lies in providing a doctrinal perspective of the evolution of the Spanish Air Force. It does not try to repeat previous studies on the subject but to show a more comprehensive approach to it, by focusing this analysis exclusively on how airpower doctrine evolved in its first 25 years. If after reading this paper, the reader realizes that by 1936 Spain had a solid airpower doctrine and that contextual factors conditioned the lack of independence of the Air Force, this study will have achieved its goal.

## Chapter 2

### Historical Context

*The history of a nation is not solely that of its formative and ascendant period. It is also the history of its decadence. If the former consists in amalgamation, the latter may be described as an inverse process. The history of the decadence of a nation is the history of a vast disintegration.*

—José Ortega y Gasset<sup>1</sup>

In most of the countries that developed an air force, the beginning and evolution of airpower and its doctrinal development were characterized by a set of contextual conditions usually required to assure some kind of success. Although there were differences in time and degree on how well countries like Italy, France, Germany, or Great Britain developed their military aviation and airpower doctrine, all of them shared several political, economic and social indicators and factors that, without doubt, contributed to a better development of aviation than Spain possessed in 1936. Careful study and analysis of these contextual factors indicate that political stability, industrial development, and social cohesion were essential in developing and organizing a new, independent air service.

The political stability aspect is a vital one because strong leadership and political coordination are needed to carry out projects and policies that require clear directions, wise decisions, and strong official support. In addition, political stability and effective leadership contribute to define national projects and initiatives, which embrace a rational

domestic and foreign policy guidance, and a strategic vision and skillful coordination of the national instruments of power. Unfortunately, Spain lived the first 25 years of the 20<sup>th</sup> century with an absolute lack of political stability or effective leadership. During this time, the nation shifted from a monarchy to a republic and different governments failed to articulate a coherent domestic and international policy. A military dictatorship was even established by common agreement in an attempt to restore national cohesion and credibility to political institutions, including the monarchy. Nevertheless, all was in vain and the result was the collapse of the monarchy and the establishment of the Second Republic in 1931.

Moreover, in such a political environment Spain lacked any kind of political vision and national strategy. There was an absolute lack of coordination between political affairs, economic sectors, and the military. This lack of strategy, together with an endemic international isolationism, would not help in assigning a sound role to the new air service as occurred in other countries. In addition, Spain had adopted a pacifist philosophy after the loss of her last oversea possessions, although she maintained a large army and navy. Yet, her armed forces were ill equipped and completely alienated from the rest of the society, resulting in a lack of subordination to civil power. Within such a flawed decision-making system, it was almost impossible to get political direction and support in developing airpower. In this political chaos, a weak economy and a generally bad administration would not cooperate to reach any goal.

Spain was also an underdeveloped country economically at the beginning of the 20<sup>th</sup> century. With an agrarian-based economy, Spain was not prepared to support the technological development required by the new invention of aviation. The country was

deficient in natural resources needed to create and maintain a consistent industrial network able to produce materiel and infrastructures required to develop aviation facilities and factories. In addition, the state's financial situation was insufficient to support aviation innovators or public scientific research projects. Thus, although Spain had scientists and engineers like Torres Quevedo or Juan de la Cierva, the state was unable to support their initiatives and they had to seek support in foreign countries.<sup>2</sup> In addition, this lack of technological development or financial base negated the possibility of developing a strong civilian air industry, which in most other countries would play an essential role in expanding airpower in the interwar period. Linked to the political situation, an inefficient and excessively bureaucratic administration would not help to provide a good management of the scarce financial resources. Due to these factors, the few initiatives taken to create national industry, commercial airlines, or other aeronautical services would never be sufficient to propel national airpower, either military or civilian. While in other countries government intervention and protectionism helped to develop aeronautical companies, schools, and infrastructures, in Spain these efforts were very weak and badly managed. In sum, this political and economic background did not contribute to generate the social enthusiasm required to facilitate the growth of airpower

Spanish society was a reflection of this political and economic situation. Lack of leadership and economic underdevelopment would motivate the people to concentrate their attention on political and social matters rather than on the progression of airpower. In that context, the advent of aviation would not spur the same interest that it did in other countries across the world. Unlike other European countries, the Spanish government did not make serious attempts to foster air mindedness; neither did the press pay attention to

the development and potential uses of airpower. Very few aeronautical festivals were celebrated, and very few private or public air schools were established to promote aviation among people. In fact, to fly was considered more a sport than a future profitable activity and the press highlighted more the risks and dangers of flying than the advances made in it. Flying was reserved almost exclusively for aristocrats and military personnel since ordinary people lacked the resources to pay for it.

Nevertheless, some individuals would receive the new invention of aviation with enthusiasm and would try to influence governments and social institutions in attaining support for their ideas. Torres Quevedo, Juan de la Cierva, Barrón or Emilio Herrera (all of them well-known Spanish engineers) were some of the few that contributed in maintaining Spain's connection to the new technology while Ramón Franco, Loriga, Gallarza or Barberán, among others, would help to improve social recognition for Spanish aviation.<sup>3</sup> Ruiz de Alda, in a lecture given in Barcelona in 1932, said with reference to this problem that “Spain does not have a policy to propagate social air mindedness. There are only isolated, undirected actions from some enthusiasts who are creating some aeronautic centers but getting few benefits because there is not a well established heading to follow.”<sup>4</sup> He was arguing for a coherent national policy to help develop a strong airpower in Spain. In his opinion there was no airpower policy in Spain—either civil, commercial, or military. Nevertheless, Spanish aviation would be able to forge a solid airpower doctrine despite those limiting contextual factors, as described in the next chapters.

## Notes

<sup>1</sup> Ortega y Gasset, José. *Invertebrate Spain*, 23. Translated by Mildred Adams.

## Notes

<sup>2</sup> Torres Quevedo and Juan de La Cierva, both Spanish engineers, designed and patented an airship model—the Astra-Torres—and the “autogiro”—an aircraft powered by a rotary-wing system—respectively. *Historia de la Aeronáutica Española*, vol.1, 108/613.

<sup>3</sup> Franco, Loriga, Gallarza and Barberán were some of the most renowned protagonists of Spanish airpower in the mid 1920s and the early 1930s. In those years, Spanish military aviators participated in international air endeavors by connecting Spain with her old historical colonies, such as the Philippines, Guinea, or Central and South America countries. *Historia de la Aviación Española*, 107, 132, 162.

<sup>4</sup> “Información Nacional. España vista desde el Aire,” *Revista de Aeronáutica*, August 1932, 221. (Translation of this and further quotes or citations in this paper are made personally by the author of this paper unless otherwise indicated in the endnote.)

## Chapter 3

### The Decade of the 1910s: The Beginnings

*Wealthy nations are dedicating huge amounts of money to acquire these aircraft, but we can do it only moderately. However, it is discouraging to observe that private initiatives, as setting up air schools or making economic contributions, are not occurring in Spain unlike other countries. These initiatives would be a powerful support if they were coordinated effectively with official programs*

Spanish Royal Decree (16 April 1913)<sup>1</sup>

Aviation began and grew in Spain by accident rather than as a logical product of technological and economic development, as Spain was neither an economic nor a military power. The decision to choose “the heavier than air” option was taken after the failure of two experimental tests of the single airship for which Spain had initially opted.<sup>2</sup> The Aeronautic Military Service, in charge of operating and maintaining balloons, was seeking a more flexible and versatile system that could improve balloon performance in observation, spotting, and reconnaissance missions. In 1910, the first airplanes were acquired from France, just a couple of years after its arrival in Europe. An experimental flying unit and the first aerodrome were established to test and operate these aircraft. In 1913, as soon as the first pilots were trained and more airplanes were bought, the Air Military Service was officially born and organized as a branch of this Aeronautic Service. The first expeditionary unit, with 14 aircraft, 10 pilots and 6 navigators, was assigned to cooperate with the Army in colonial warfare in North Africa a few months later.<sup>3</sup>

The early participation of this unit in a colonial war would give Spain preminence in first employing the airplane in military operations.<sup>4</sup> As opposed to other European countries that would take part in World War I, Spanish military aviation would follow a faster development in its early stages. In Morocco, Spain would fight a guerrilla war rather than a conventional war. The enemy was scattered and mixed with the population, and a very hilly terrain did not allow army forces to move easily. In addition, the lack of enemy airplanes and antiaircraft artillery would allow the Spanish army to employ airpower without restriction from the beginning. Observation and reconnaissance missions were rapidly appreciated in such a terrain and against this type of enemy. Moreover, bombardment missions were rapidly scheduled to compensate for the inaccessibility of Army units to many enemy positions. While European armies would give greater value to artillery fire and tanks, in the Morocco scenario aviation became useful much sooner. Its versatility, flexibility and velocity would allow it to be used more successfully than balloons and airships in their classic tasks, and its firepower would contribute to assigning aircraft a more decisive role than initially expected.<sup>5</sup>

The group of aviation pioneers who flew those airplanes was directly responsible for this great success by envisioning very early aviation's potential uses. This can be noted in the decision to acquire aim-sights and aviation bombs before the colonial war had even started.<sup>6</sup> In fact, this group of pilots was eager to demonstrate how airpower could contribute to military operations and to convince Spanish leadership about its future. However, they did not have the chance to confront enemy aircraft that could deny the use of airspace in performing their missions. Undoubtedly, this factor was not helpful for judging the importance of gaining the control of the air and, therefore, there was little support for an independent role for airpower. As a consequence, airpower was only

conceived of as an essential tool in supporting army operations. With an extensive use of photocameras, reconnaissance missions took precedence in this tactical environment in which offensive surprise was not so important as it would be in World War I. In all these missions against an enemy who did not represent a serious aerial and military threat, Spanish aircraft performances were adequate and no special requirements were needed. Thus, acquisition programs for future aircraft did not contemplate the need to purchase heavy bombers yet. Eventually, however, better reliability and enhanced support were requested as well as greater endurance and range in order to provide better efficiency.

Yet with all these developments, the air service did not foresee an exclusive role for airpower that could justify its independence. Nevertheless, its performance had clearly overcome those of balloons and airships and the organic dependence of the Aeronautic service would soon be a matter of debate. As early as 1912, Alfredo Kindelan foresaw a splendid development of aviation across the world and he argued for a well-prepared organization. In 1916, he insisted on his proposal and argued that “in Spain, the aeronautical subject is extremely important. Submarines, mines, airplanes and airships are the solution to Spanish national defense, without risk of economic ruin.”<sup>7</sup> His ideas would later influence organizational decisions.

## **Organization and Force Structure**

Airpower organization and force structure did not show interesting developments during this period. As a new service, aviation would grow up slowly inside the Aeronautics service by competing with its brother, the Aerostatics branch. Army engineers, as the most expert military sector in aeronautic matters, created the service. In the first years, efforts were directed to build a basic structure to set up training schools

and to furnish the first expeditionary unit. The urgency of the colonial military campaign would not give enough time to train many pilots, but the small number of available airplanes did not offer many opportunities, either. A military training school and a civilian one were under operation in 1913, before the first combat flights were deployed to Africa. Although the Great War would soon negate the possibility of importing new airplanes, two more units would be created in the following years (with national airplanes and engines) and sent to Africa.<sup>8</sup>

At the end of 1918, the air service had only 3 combat units in Morocco, two of them attached to Army divisions and the third one under the direct command and control of the higher headquarters. The first two were used for tactical purposes while the third was assigned to perform strategic reconnaissance and liaison missions.<sup>9</sup> After the first year of aviation, pilots from different army branches and other military services were trained, ending in that way the initial flying monopoly of military engineers. Since airpower could be used in different auxiliary services, it seemed convenient to open the aviation career to everyone wanting to fly. This decision played a major role in reorganizing the air service again late in this decade.<sup>10</sup>

In 1917 two major events would also raise the issue of reorganizing the air service. On the one hand, the Spanish Navy would push to obtain an independent service of its own. Lessons learned in World War I about how airships and airplanes could protect naval convoys and help in reconnaissance missions would be argued to support this end.<sup>11</sup> On the other hand, the British influence in creating an independent air service, the Royal Air Force, would also be noted. With due attention to these events, Army staff prepared a detailed study to define how the air service should be organized. An official survey was issued among army branches asking whether naval and military aviation should form a

single service, or if the service should be established as an independent branch inside the Army. As a result of the survey and the study, military aviation would get independence from the Engineers corps but there would still be a distinction between naval and military aviation. However, the air force was not created a military branch by itself yet, but was considered a common service for the rest of the army branches. Uncertainty about what might be the future role of airpower and technological developments did not influence Spain to follow the British model at this time. Instead, flying units would remain attached to army divisions, although new administrative organisms would be created to centralize instruction and logistic issues. It was still too early for Spanish aviation to adopt revolutionary measures.<sup>12</sup>

## Notes

<sup>1</sup> Paragraph of the preface of a Royal Decree of 16 April 1913, which promulgated the “Regulations of the Military Aeronautic Service.” With this document, military aviation was formally created. Cited in *Historia de La Aeronáutica*, vol.1, 310.

<sup>2</sup> In 1909, Spain decided to buy an *Astra-Torres* airship built in France but some mistakes and failures would delay its delivery until 1913. The war in Africa would force the Army to acquire airplanes in substitution for this airship, called “España.” *Ibid.* 112

<sup>3</sup> As a consequence of an international agreement signed among France, England, and Germany to regulate colonial rights in North Africa, Spain received in 1912 an assignment to establish a Protectorate in the so called Riff region (current Morocco), between the Spanish cities of Ceuta and Melilla. *Ibid.* 350.

<sup>4</sup> “On November 5, 1913 the first combat flights were performed. Although Italian airplanes had dropped bombs in Libya in 1912, Spain would be the first country to employ air forces in an organized fashion and drop bombs using German aim sights (“Carbonit”) integrated on the airplanes.” *Kindelan, Alfredo* quoted in *Ibid.* 367

<sup>5</sup> Spanish airplanes did isolated strategic bombardments in that period. On December 25, 1913, three airplanes were used to force insurgent villages to surrender. Col. Silvestre, as the Army Commander in Chief in Africa, decided to prove airpower could weaken the enemy’s will. *Ibid.* 384

<sup>6</sup> D. Alfonso de Orleans, cousin of the King Alfonso XIII and one of the first Spanish pilots, acquired “Carbonit” aim sights in 1910 in Germany. As well, he would bring “Gotha” bombs that were reproduced in Spain. *Ibid.* 367, 375.

<sup>7</sup> *Kindelan, Alfredo* cited in *Historia de La Aviación*, 78.

<sup>8</sup> Around 120 airplanes were built in Spain during World War I. Eduardo Barrón, a Spanish army engineer, designed and produced different airplanes. As well, the Hispano

## Notes

factory in Barcelona built two engines, although their patent was sold to France. *Ibid.* 69-70.

<sup>9</sup> This information is extracted from an official report of the Aeronautic military service, April 1918, in which a resume of the most significant issues of the development of aviation is given. In this report it is also indicated that problems with training airplanes, especially with engines, were constantly encountered. *Spanish Air Force Historical Archive's document*. (see Bibliography).

<sup>10</sup> Kindelan, Alfredo cited in *Historia de La Aeronáutica Española*, vol.1, 296.

<sup>11</sup> In 1917(September 13), Spanish Naval Aviation was officially created, although the first hydroplanes were not bought until 1920. In addition, an aircraft handling ship, the Dedalo, was also acquired to carry an airship and several hydroplanes aboard. *Historia de la Aviación*, 83-86.

<sup>12</sup> “Informe relativo al cuestionario sobre Organización del Servicio de Aeronáutica Militar,” *Historical Archive document*, 1918 (see Bibliography).

## Chapter 4

### The Decade of the 1920s: The Foundation

*Aviation is the arm of poor nations. A single aircraft can produce damage to the enemy although it may be shot down. Where artillery cannot hit, aircraft will reach with less cost and greater effectiveness.*

—Gen Francisco Echagüe<sup>1</sup>

During the 1920s, airpower doctrine began its development around the world, mainly as a consequence of technological advances and experiences obtained from World War I. It would be in this decade that Douhet, Trenchard, and Mitchell—the three main airpower advocates—would articulate their theories, giving arguments to achieve a decisive role for air forces in future conflicts. Spain would follow these theories closely although debates would not take on as much passion as in other countries. In those years, a first outline of Spanish airpower doctrine would come out as a result of proactive, relevant leaders like Echagüe, Soriano, and Kindelan. The three would be in charge of reorganizing and developing the air service in this decade.

At the end of World War I, a study was done by army staff personnel to analyze the consequences of airpower operations for the outcome of the conflict. Although the final report did not show clearly the existence of critical analysis, it constituted a first approach to evaluate how effectively airpower was employed in the war and how best it could be used in the future. Most likely, this report influenced the decision on what kind of new aircraft should be acquired by Spain to support the ongoing effort in Africa.<sup>2</sup> As a

consequence, in realizing the necessities of air defense and bombardment missions, the air service decided to increase its forces with new fighters and better bombers with longer range and more firepower. These planes were bought in France and England and instructional programs were scheduled in Spain to train pilots in flying the new airplanes. The training courses gave Spanish pilots access to new techniques, tactics and procedures at first hand from expert pilots who had participated in the last war. Therefore, the air service now had the chance to apply new ideas in Africa.

The African campaign would last until 1927, and during those seven years would offer airpower better opportunities to experiment with new and more decisive roles. This period was characterized by a more political approach to solve problems in Africa, especially after the infamous disaster of Annual, in which more than 12,000 Spanish soldiers were killed.<sup>3</sup> The weak military position in which this placed the Army allowed the air service to dedicate a greater effort to supporting the land campaign. The defensive posture adopted by army units in conjunction with the diplomatic approach would concede to airpower the chance to be employed in a much more autonomous and strategic manner than before. In these years the air service would perform decisive air supply missions to isolated and surrounded army positions, and day and night bombing missions over strategic targets (like crops, cattle, villages, military camps, artillery, and enemy fortifications). Incendiary and explosive bombs to a large extent were employed as well. Air presence, or demonstration of force, would also be employed to compel the enemy to negotiate. Sometimes airplanes were used in dropping warning pamphlets with political purposes. Finally, a better development of tactics would also be attained.

In addition, better performances and reliability of airplanes would allow Spanish pilots to introduce new tactical concepts, specifically in supporting infantry and cavalry assaults. The lessons learned about air supply missions would lead them to apply low flying techniques in cooperating with land offensives by bombing and strafing enemy lines. Moreover, a well-coordinated airpower shield would be continuously provided in such a way that friendly forces could continue their advance. This tactic would be called “*la cadena*” (the chain) and would be used extensively in the Civil War in the 1930s. In reconnaissance missions, a more extensive use of photography would be introduced. These airplanes would also be used in swing roles by conceding them liberty to seek and destroy enemy targets. Finally, a fighter unit was assigned to seek and destroy the single enemy aircraft flying in the area. Thus, the full spectrum of air operations would be performed in these years in Africa, by taking advantage of better capabilities and training as well as acquiring a better understanding of how to exploit both. Goded, an Army general, summarized army aviation actuation thusly:

Aviation is extraordinarily effective and has a huge morale effect in a variety of uses in Morocco. For information and surveillance, punishing bombardments, breaking away enemy concentrations, destroying his crops, fighting artillery positions or using bombs and strafing to overcome resistance, in the most difficult instances, by supplying garrisons and columns, in every situation, the airplane is the essential war instrument.<sup>4</sup>

Probably the best example of the air effectiveness attained in the African campaign was the role played by airpower, both army and naval air services, in what has been considered the first joint-combined operation in military history: the amphibious operation in the Bay of Alhucemas, on September 8, 1925. In coordination with French and Spanish navy and army forces, around 100 airplanes provided air support all across the spectrum of operations.<sup>5</sup> With this successful operation the African campaign would

be practically finished and the air service would concentrate on developing its organizational structure. Fortunately, at that time, its most prolific advocate, Alfredo Kindelan, was in command of the service.

## **The Roots of Spanish Air Doctrine**

Kindelan is considered to be the earliest Spanish airpower advocate. He was one of the founding fathers of military and civil aviation in Spain and very soon he would advocate the advantages of airpower for promoting national interests. Although he was not a visionary like Douhet, he had a tremendous faith in airpower and was consistently aware of the advances in aeronautical matters. His influence has been noted in the evolution of Spanish airpower since its creation and more specifically in the development of its doctrine of employment. As chief of the air instruction directorate, he promulgated the first course for air unit commanders in 1924. In this course, several lectures about strategic and tactical employment of airpower were addressed. They composed what can be considered the first doctrinal body of Spanish airpower.<sup>6</sup>

In this first Spanish airpower doctrine, Kindelan identified the positive characteristics of airpower as a flexible, versatile, and offensive weapon. It would be employed against a great variety of targets and which could contribute decisively to defend strategic national interests, especially in countries like Spain that have maritime borders. In his opinion, airpower should be considered the strategic arm for Spain rather than navy forces due to its ability to hit the enemy's vital targets more effectively. In addition, airpower could more efficiently defend interior lines of communication while its offensive capacity would allow it to attack exterior lines. Furthermore, and following the concept once proposed by Gen Echagüe, Kindelan stated that aircraft were "the destroyer

of poor nations" like Spain, whose armed forces could be composed of an important air force and a light navy, equipped with submarines and light vessels to defend coastal and maritime facilities. In such a way national sovereignty could be guaranteed.<sup>7</sup> He concluded by proposing a future organization for the air force, which should comprise an independent arm, dedicated to strategic bombing and air defense missions, and an auxiliary service in cooperation with the Army and the Navy. As for tactical employment of these forces, Kindelan and the rest of his collaborators (Barberán, Aymat, Warletta, Herrera, and Orleans) addressed tactical bombardment and aerial combat, by giving a description of these missions and the principles by which they should be planned and performed.

Finally, in these initial lectures a thorough analysis was made about organizational and doctrinal use of airpower in countries like France, Britain, the USA and Italy, including the debate provoked by Billy Mitchell and his opinions. After analyzing how those countries had developed their air forces Kindelan proposed six principles to consider in organizing a future independent air force: unity of effort, offensive employment, quick mobilization, industrial nationalization, fostering ethical behavior, and careful selection and instruction of personnel.<sup>8</sup> In conclusion, Kindelan was convinced of the necessity for creating an independent air force and he had a clear understanding about the strategic value of airpower, its principal characteristics and how it should be organized. In fact, he participated actively in achieving what can be considered the fifth branch of the Army.

## Organizational Evolution

Although it was Kindelan who carried out the most decisive effort in organizing the air service, Gen Francisco Echagüe should receive credit as well. As chief of the service between 1919 and 1924, Echagüe undertook several initiatives to introduce structural changes in command positions as well as combat units. Most of these were directed to organize a comprehensive logistics support and administrative organization. During his command, his efforts were prioritized to furnish and train the air force with better airplanes and technical education. He incrementally increased the air fleet by more than 100 airplanes in those years, created several elementary, specialist, and tactical schools across the country, and transformed the air force as a branch of the army rather than as a service.

By regulating the formation of four air zones in the Spanish peninsula plus the African air forces, Echagüe paved the way to create new air bases and aeronautical infrastructure to assemble air units under the command of aviation personnel. The service was structured in reconnaissance, air defense and bombardment units, with wings, groups, and squadrons as organic elements. Pilots were grouped by a new air scale, in which air proficiency took priority over military rank in order to assign command responsibilities.<sup>9</sup> However, many of these efforts were not carried out either under his command or his successor's command—Gen Soriano—due to contextual factors, mostly related to political, military, and economic issues. Later on, when a more favorable situation presented itself, Kindelan would apply many of Gen Echagüe's initiatives as well as others of his own.

Kindelan took over the air service command from Gen Soriano when Primo de Rivera, a military dictator, was ruling Spain. Primo's influence and airpower accomplishments in Africa likely helped in developing further the ideas of Kindelan and Echagüe. During his dictatorship, many of these measures were undertaken and the air military service attained the status of an army branch. Kindelan achieved the centralization of military and civil aviation under a single command in an attempt to enhance national airpower effectiveness. Nevertheless, he was not asking for an independent service yet, likely because he knew that such a proposal would be rejected while a military dictator was in command. Rather, Kindelan would request the creation of a common Defense Ministry in which aviation—both military and civil—should be commanded by aviators who were dedicated to those roles, which allowed Spain to better achieve strategic interests.<sup>10</sup>

Kindelan thus tried to end the piecemeal employment of airpower. Overall, he paid attention to civil airpower by promoting air mindedness with the participation of Spanish pilots in accomplishing new international air records, by flying to South America, the Philippines, and Guinea. He also developed an aeronautical industry and created national airlines and regional services. Yet despite his efforts, he would never find strong support for his initiatives among other military personnel. Very likely, his personal friendship with King Alfonso and his influence on Primo's decisions would work against his purposes, and therefore against airpower's interests, when the monarchy collapsed. In fact, three months before the king abandoned the country, a governmental decision cancelled the recently created organization, turning the situation back to 1919. With the advent of the Second Republic, Kindelan would leave Spain and the air service lost its

most prepared, senior, and enthusiastic leader. He would return later in the Civil War to accomplish his suspended goal of gaining independence for the air service.

## Notes

<sup>1</sup> Cited in *Historia de la Aeronáutica Española*, vol.1, 507.

<sup>2</sup> Col. Rojas wrote this report in 1919. It can be read in its totality in Ibid. 497-505.

<sup>3</sup> In July 1921, an attack of rebel forces against Spanish military troops in Annual, North Africa, would produce the most important fiasco in this colonial war. *Historia de la Aeronáutica*, vol. 2, Chapter 5.

<sup>4</sup> Goded, Manuel quoted in Ibid. 464.

<sup>5</sup> Ibid. Chapter 36.

<sup>6</sup> This doctrinal body is reflected in a 5-volume work, in which doctrinal aspects as well as technical information are addressed. “*Conferencias Teóricas sobre Aviación Militar*,” 5 vols. (The work can be found in AU Library, Maxwell AFB.)

<sup>7</sup> Valverde, Miguel. “Un Decenio de Fértil Actividad del Pensamiento Aeronáutico Español,” *Revista de Aeronáutica y Astronáutica*, May 1988, 459.

<sup>8</sup> Ibid.

<sup>9</sup> Salas, Ramón. “Proceso Organizativo del Servicio de Aviación.” Ibid. 454.

<sup>10</sup> *Historia de la Aviación*, 189.

## Chapter 5

### The Decade of the 1930s: Doctrinal Maturity

*Parochialism is present everywhere, and in the Army is exercised by those who commanded Africans...They have condemned aviation to not have its own command. They do not appreciate its participation in Morocco so as to allow the air service to have senior leadership in its ranks.*

—Maj Luis Manzaneque<sup>1</sup>

It would be in this decade when Spanish airpower doctrine would reach its maturity.

The doctrinal thinking of Kindelan and his organizational initiatives had penetrated deeply into many of his subordinates' minds, and they did not hesitate to defend a more independent role for Spanish airpower once the Second Republic was installed. In fact, a kind of symbiosis was established between republican governments and airpower in the first years.<sup>2</sup> The support given by many military aviators to the new political system had much influence in advancing airpower interests.

When the new political regime took over, a sound airpower doctrine was already circulating among the flying community. In 1930 Maj Manzaneque, an expert military pilot, published his airpower thoughts in a book: *El Dominio del Aire y la Defensa Nacional*. Although the book itself was based on analyzing Douhet's airpower theory and reflected some of Kindelan's doctrinal concepts and propositions, Manzaneque presented for the first time a complete doctrinal development of airpower. This book constitutes the first critical analysis in Spain of how new technology, practice, and ideas contribute to

articulate a solid airpower doctrine. The ideas came from Douhet's airpower theory and his description of air warfare, airpower characteristics, capabilities and roles. Recent technological developments were also analyzed to assess how well many of these concepts could be translated into operational effectiveness. Furthermore, a study of past air interventions and exercises demonstrated why airpower should receive special attention. Finally, Manzaneque analyzed Spain's strategic environment, and proposed a national defense strategy, and a coherent force structure, in which airpower would play an essential role. He concluded his work by proposing a comprehensive military organization in which the air force would be considered as an independent service at the same level as the Army and the Navy. He also included guidance to progressively accomplish this outcome. A more detailed relation of his arguments is included in Appendix A.

In conjunction with this book, another publication, *Revista de Aeronáutica*, would be used as a platform to address doctrinal issues. Many airpower advocates used its pages to advance and defend airpower thinking, in its civil and military spheres. The review, created with the intention of promoting air mindedness among the public, would reflect much of the interservice rivalry of those years, specifically between the Navy and the recently created Aviation branch of the Army. In addition, once the air service achieved virtual independence of the Army and the Navy, some of its most relevant figures would use this review to separate air, land, and naval warfare concepts, to delineate and define air force structure and roles, and to propose the foundations of a real independent air service. Training and acquisition matters, as well as civil airpower and national industry

development were also addressed in depth in some of the review's articles. A more detailed description of some of these articles is presented in Appendix B.

Overall, this group of pilots was able to formulate a solid airpower doctrine. They were successful in convincing the political leadership about how well airpower could contribute to national strategy and in devising the best employment of air means for doing so. Spain could be more effectively, and efficiently, defended by using airpower as a deterrence force in peacetime, and as the best retaliatory means in case of war. As a quickly deployable and redeployable force, airpower could better serve future international and national military commitments, and its offensive character would be decisive in showing political determination. In addition, the threat of aerial bombing from a possible enemy recommended the constitution of an air defense system with active and passive elements. Lastly, airpower would always support army and navy operations once attacks against vital centers and enemy infrastructure had been concluded.

Spanish airpower doctrine did not differ too much from British airpower doctrine, which seems to have been very influential in the development of Spanish aviation.<sup>3</sup> Therefore, similar to the RAF, airpower should be structured in strategic bombing, air defense, and auxiliary units. The first two would be dedicated to achieve and assure air superiority, and the last to cooperate with the army and navy in land and naval warfare. However, economic constraints and the attempt to avoid a traumatic separation from the army moved airpower advocates to accept a gradual implementation of this force structure, by adequately furnishing auxiliary aviation before developing the truly independent air service. In practice, however, this decision would prove definitely counterproductive to their interests since the Army and the Navy would use it to delay the

organizational changes. While airpower advocates would base their concepts and ideas on British and Italian airpower development, the Army and the Navy would follow the French model in order to avoid any real independence of the air service.<sup>4</sup> In fact, the organizational process of the Spanish air service would resemble the French model.

### **Organizational Process: Virtual Independence**

Although the organizational steps taken in this decade were very promising, the air service would never reach authentic independence. The first government of the Second Republic committed to a complete military reform, in which aviation would receive special attention. Political leadership—more specifically Manuel Azaña—was absolutely convinced about the convenience of concentrating civil and military airpower under a centralized command and control structure by which commercial, industrial, and defense issues could be commonly addressed.<sup>5</sup> The concepts of economy of force and unity of command were correctly formulated and applied in this process although the efficacy and efficiency of the organization would be always jeopardized by fiscal, political, and social constraints.

The first step in the organizational development during the 1930s was to grant the air military service the same command structure and organization that it had earlier had with Kindelan. A few months later, the air service was officially recognized as an army branch. In taking this step, the new air arm was composed of an independent aviation or *armada aerea*, air defense units, and auxiliary aviation in support of army and navy operations.<sup>6</sup> Nevertheless, the command and control of the air branch would remain under the Chief of the Army, something that did not satisfy the interests of airpower advocates. However, they found a solution very early on when Azaña, now Prime Minister,

culminated the process with an official decree. This decree created a new organization, *Direccion General de Aviacion*, which concentrated civil and military airpower under the direct control of the government. The idea resembled the French decision of creating the Air Ministry in 1928.

The new organization was directed to exercise a centralized control of economic investments and industrial and infrastructure developments over national airpower. This decree dictated that “the air force will be composed of an *armada aerea*, air defense aviation, and Army and Navy auxiliary aviation. The organization of this *armada aerea* will start when auxiliary aviation and air defense aviation have the required means to perform their specific functions.”<sup>7</sup> In addition, the government indicated that the Chief of the Air Force would command and control both the *armada aerea* and air defense aviation, while his responsibility toward auxiliary aviation was restricted to administrative, technical, and instructional aspects. Operations and disciplinary matters would remain under the direct command of Army and Navy commanders.

Therefore, although the governmental decree could be considered as the official recognition of an independent air force, this independence was more virtual than real. In fact, many of the institutions and organizations created by this regulation would never work out properly or even be implemented. The *Consejo Superior de Aeronaútica*, an overarching organization in which priorities and allocation of air assets were to be decided, would never effectively assume its responsibilities. Thus, in future dispositions the government limited its tasks to consulting functions. The air staff and the aeronautical national school were also created with constraints and limitations that would force airpower advocates to propose and defend the need to properly regulate their constitution.

In December 1935, Major Longoria (in an article in *Revista de Aeronaútica*) affirmed that “in Spain there is not yet an air staff with the required formation, authority, and independence to adopt decisions related to planning and execution of air operations.”<sup>8</sup>

The education of military pilots was also a matter of disagreement among the three services. The Army and Navy defended the necessity of educating pilots in their own military academies to guarantee a complete knowledge of ground and naval operations. To them, to fly was just another way to perform their tasks and missions and they did not accept the necessity of creating an independent air academy. However, airpower advocates claimed “the critical necessity of a real specialization, that consists of educating as pilots those who are going to fly airplanes and work in the air, before anything else.”<sup>9</sup> The issue was also translated into quality of training in operational squadrons. It was almost impossible to standardize instructional programs of flying units although a further disposition would try to regulate it.<sup>10</sup> Finally, the establishment of an air academy would have ended the eternal problem of integrating military personnel from the different branches of the Army into the ranks of the air force. However, that never happened.<sup>11</sup>

The influence of Army and Navy leadership was still important and, although airpower advocates would try consistently to gain the command and control of auxiliary aviation, they would fail. In different publications, they argued for the convenience of creating a Defense Ministry with a joint staff in which the three services were equally represented. In addition to formulating strategic and operational joint planning, this entity would serve to allocate and prioritize air assets with attention to campaign stages. In such a way, airpower advocates considered that the air force could attain real independence,

with the unity of command and economy of force required by airpower. But the sister services viewed this initiative with mistrust because it implied not only the loss of operational control over their auxiliary aviation, but also sharing their limited budget and resources with the new service. In giving priority to equipping auxiliary aviation before building the *armada aerea*, the army and navy had found a ingenious way to delay the independence of the air force.

The lack of financial and technological support did not allow building or buying enough aircraft to modernize existing flying units or create new ones. As Azaña himself remarked in a speech to the Congress, “the first acquisition program for military aviation costs 150 million of pesetas and...I cannot come here to ask for this amount to buy airplanes and there are no airplanes because we do not have money to buy them.”<sup>12</sup> Politics were also influential in delaying the issue since in international forums Spain was defending the abolition of combat aviation. In addition, in 1934 two political events would give support for the government and army leadership to prioritize auxiliary aviation even more. Aviation was employed again as an auxiliary service in establishing national interests in Ifni (Western Sahara) and in containing social unrest within Spain, in Catalonia and Asturias. The decisive participation of the auxiliary air forces in those events convinced the government of the necessity of restoring control of airpower to the army. At the end of 1935, *Direccion General de Aeronáutica* came again to depend on the Army Chief of the Staff, ending the airpower advocates’ aspirations.

These enthusiasts did not lack arguments and ideas to fight the battle for an independent air service. They had enough experience and knowledge to support their proposals. In fact, in many articles they defended different solutions to achieve a better

result, by analyzing force structure and airpower doctrine of other countries. In brief, they were not amateurs on the subject. What they lacked, however, was enough influence and seniority to leverage the fight against the sister services. After the arrival of the Second Republic, the air service ranks were composed of just majors and captains, people that could not compete with flag officers in influencing the opinion of political leadership nor in gaining real support for their demands. The strong voice and support of more senior, respected officers was needed to remain afloat in a much more complex political environment, where economic constraints and technological limitations did not contribute to the purpose of achieving real independence for the air force.

## Notes

<sup>1</sup> *El Dominio del Aire y la Defensa Nacional*, 223.

<sup>2</sup> On December 15, 1930, a group of military pilots, members of the ARM (the Republican Military Association), led by Ramón Franco (brother of Francisco Franco) would participate in a republican rebellion. Their intent was to overthrow the Monarchy by cooperating from the air in compelling governmental officials to accept a republican political system. *Politics and the Military in Modern Spain*, 262.

<sup>3</sup> British influence was noted generally on Spanish airpower development. Aircraft, training, and British doctrine arrived in Spain during the 1920s. Kindelan and Alfonso de Orleans themselves showed this influence in their airpower thinking, as noted by Col Valverde in his article. *Revista de Aeronáutica y Astronáutica*, May 1988, 459-466.

<sup>4</sup> *Revista de Aeronáutica* (1932-1936), different articles. See Appendix B.

<sup>5</sup> Manuel Azaña was the first republican Minister of War and author of this military reform. *Politics and the Military in Modern Spain*, chapter 14.

<sup>6</sup> Roles and functions of the air service, as well as tactical doctrine, can be found in. *Manual del Combatiente* (1933).

<sup>7</sup> “Información Nacional: Decreto de Reorganización de la Aeronáutica,” *Revista de Aeronáutica*. April 1933, 270.

<sup>8</sup> Longoria, Francisco “Preparación de la guerra (1),” *Revista de Aeronáutica*, December 1935.

<sup>9</sup> Longoria, Francisco “Precisando algunos conceptos,” *Revista de Aeronáutica*, April 1933, 184.

<sup>10</sup> *Plan de Instrucción de las Unidades*. Probably the first manual of this type in Spain, in which there is an attempt to normalize flying instructional plans in combat units (49). In that manual, there are also concerns about lack of discipline in training missions and waste of flying hours as a consequence of the absence of instructional plans (41).

## Notes

<sup>11</sup> Since the creation of the air service, and due to the absence of a specific air corps, a problem called “duality” was present. It consisted in having two different ranks inside the air service: one was the military rank and the other one was a specific rank in relation to their flying qualification and experience. This situation brought about many disappointments among those who considered that flying qualifications should take precedence over military rank while serving in the air service. In fact, Kindelan himself once left the air service because Bayo, a Captain who had been his subordinate and with less flying experience, was promoted to major before Kindelan, becoming a new squadron commander. *Historia de la Aviación*, 66, 94.

<sup>12</sup>Ibid. 166.

## Chapter 6

### Conclusion: A Legacy for the Future

When the Spanish Civil War started in July 1936, Spain did not have yet an independent air force. On the contrary, after 25 years of existence, the air service remained attached to the Army, while the Navy retained its own auxiliary aviation. However, in those years Spanish airpower advocates had forged a solid airpower doctrine. Although following a different path than other European countries, these air enthusiasts had been able to consolidate sound thinking for Spanish airpower based on both domestic and foreign ideas and experiences. A colonial war in North Africa would give them the chance to test airpower in a broad spectrum of operations. The fact of conducting a limited war against a weak and disorganized enemy, in a harsh terrain, did contribute to achieving a moderate level of airpower effectiveness, although always constrained by available technology. The end of World War I would bring new aircraft and lessons learned to be tested in Africa.

In the 1920s, the air service would achieve its most spectacular development under the command of Echagüe, Soriano, and Kindelan. They transformed the air service into a virtual branch of the army, and Kindelan set up the first doctrinal principles of Spanish airpower. Those principles, and the influence of Douhet, Trenchard and Mitchell, would constitute the basis of further doctrinal development in the hands of Manzaneque,

Longoria and other military pilots. By critically analyzing the previous war experiences, current and future technology, and the strategic environment and force structure they devised a decisive role for airpower in Spain, and defended a coherent force structure and organization for performing assigned roles and functions. They argued for an independent air force similar to Britain or Italy, and proposed strong arguments in their quest. Nevertheless, they were only partially successful and the air force would achieve only a virtual independence. Interservice rivalry and parochialism was a constant in the 1930s, and politics, a weak economy, and the lack of seniority inside air force ranks played an important role in negating any real independence.

In fact, those key contextual factors were present since the creation of the air service. The political instability of Spain in that period, including the failure of the monarchy, the outcome of the Second Republic, and the impact of the African conflict did not contribute to achieving necessary political support. In addition, Spain lacked natural and financial resources, and technological development, to spur the development of aviation. This issue would be especially important once the air service had achieved its virtual independence because there were not enough resources to simultaneously furnish auxiliary aviation and the recently created *armada aerea*. Sister services would use political events and economic scarcity to delay the process of independence. In such an unfavorable environment, what airpower advocates were missing was strong leadership in the air service that could compete against the influence of army and navy commanders. Therefore, it was not the lack of clear thinking or confused doctrine that negated independence for airpower. Spanish airpower advocates failed in their purpose to attain the independence of the air force due to contextual factors and interservice rivalry.

However, through their attempt they left the best legacy, a solid airpower doctrine that would become the foundation of the current *Ejercito del Aire*.

Based on their ideas, principles, and beliefs the Spanish Air Force began its development as an independent force in August 1939. In fact, some of these airpower advocates would reach the highest ranks and positions in the new service in the following years. From these positions, they continued their task of building a modest, but solid, airpower in Spain, with a coherent doctrine, force structure and organization. Their contribution has served to ensure a much easier integration of modern Spanish airpower in NATO seventy years after the foundation of military aviation in Spain. They should receive recognition for their faith, their courage, and their efforts in achieving this success, and that has been the purpose of this paper.

## Appendix A

### **El Dominio del Aire y la Defensa Nacional**

Written by Major Luis Manzaneque in 1930, the 265 pages of this book are structured in three main parts and 13 chapters, in addition to an introduction and an epilogue. In this appendix, a brief description of each chapter is given with a summary of some of the most relevant ideas of the author.

Preface: Public acknowledgement of the figure of Giulio Douhet, who had died recently, and about his influence on airpower thinking.

Introduction: General overview of issues addressed.

Chapter 1: Facts and data related with the most recent accomplishments and records attained by modern airplanes, technical progress in engine power, increase of range and endurance, etc. (examples of the Junker G-38 and the Dornier Do-X).

Chapter 2: Analysis and comparison of budget assignments to airpower in France, England, Italy and Spain.

Chapter 3: Concepts of “new warfare doctrine.” Critical analysis of World War I as a total war type of conflict.

Chapter 4: Analysis of submarine and the “air-chemical weapon” (combination of bombing aircraft and chemical weapons). Description of how chemical gases were used

in World War I and how countries like the USA, Russia, and Germany were developing new products.

Chapter 5: Concerns of other nations about air bombardment with chemical weapons and the measures adopted to protect a nation against this threat. His intention is to demonstrate the necessity of creating an air force capable of negating the control of the air to the enemy. Analysis and consequences of air exercises made in England, Japan, and France to evaluate the effectiveness of those raids and defensive air operations.

Chapter 6: Introduction of Douhet's airpower theory, concepts, and principles of air warfare.

Chapter 7: Development of specific airpower doctrine based on Douhet's principles and beliefs. Focus on the so-called "battle aircraft," and the author gives his definition of *armada aerea* and its roles and functions. Arguments about offensive and defensive air operations. Distinction between auxiliary aviation, and its roles, and the air armada. Concept of "control of the air" and its implications. Concept of air warfare and necessity to unify airpower under a single command.

Chapter 8: Views about national strategy and how each military service could contribute to secure national interests. Principles to confront a possible war:

- a) "To be resilient on the surface and to concentrate mass in the air."
- b) "To dedicate all air means, without exception, to build an offensive air armada."
- c) "To renounce auxiliary aviation and defensive operations by using aircraft."
- d) "To concentrate anti-aeronautical elements around our centers of gravity and avoid dispersion of those means."

- e) “To develop to a maximum degree passive air defense means, organizing for this respect the whole nation.”
- f) “To modify Army and Navy force structure and doctrine by increasing their autonomy and mobility, with the aim of being less vulnerable to enemy air attacks.”
- g) “To create the Air Ministry, or temporarily to combine all aviation under the control of the president of Consejo Superior de Aeronáutica.”
- h) “To create a superior organization to coordinate the three services in peacetime and wartime, by assuming the conduct of military operations. In this organization personnel of each service should be present and these personnel must receive professional education to be able to exercise control and command functions.”<sup>1</sup>

Chapter 9: Analysis of Army force structure and proposition of a new one with attention to new technology and lessons learned in the last conflict.

Chapter 10: Analysis of Navy force structure and proposition of a new one with attention to new technology and lessons learned in the last conflict.

Chapter 11: Force structure of the air force. Study of three possible models:

- a) “Classical school, in which aviation acts just as an auxiliary force to the army.”
- b) “British concept (in evolution), in which air defense takes priority (after that would come strategic bombing units).”
- c) “Finally, the new airpower doctrine (Douhet and Mitchell theories), in which the priority is to attain the control of the air by destroying enemy aviation, his aerodromes and factories, neutralizing his ground forces by attacking lines of communications, and destroying those centers of gravity that may influence the course of the war.”<sup>2</sup>

Approach for a possible force structure and organization, considering as a premise the unification of airpower elements and the creation of the Air Ministry. As he asserts, “the final organization of airpower will be similar to Italy, France, or Britain’s air forces, sooner or later, with or without the approval of those who currently are against this idea.”<sup>3</sup> Details of this organization are given.

Chapter 12: Analysis of current civil aviation affairs and concerns about the lack of economic support for airpower in Spain and the absence of air mindedness. Manzaneque describes the current situation of commercial airlines, aeronautical infrastructures, national industry related to aircraft and engine developments, private aviation, and, finally, the need for nationalizing petroleum production.

Chapter 13: Ideas about professional military education and other aspects of a military career.

Epilogue: Views on creating a “European federation.” As a kind of visionary, Manzaneque, in the last paragraph of his book says: “this crusade for the European union must be pursued without hesitation: it should find its fundamentals in economic and military issues and there should be politicians who find and articulate its solution.”<sup>4</sup>

## Notes

<sup>1</sup> Manzaneque, Luis. *El Dominio del Aire y la Defensa Nacional*, 183.

<sup>2</sup> Ibid. 213.

<sup>3</sup> Ibid. 223.

<sup>4</sup> Ibid. 265.

## Appendix B

### **Revista de Aeronáutica (1932-1936)**

*Revista de Aeronáutica* was a monthly periodical publication issued by the official aeronautical organization during the Second Republic. This periodical was the successor to another one that had been prohibited by the government in the last months of 1930, *Revista Aerea*. Both were directed to serve as a specialized forum in which the most relevant, current affairs related to aeronautics took place. Its pages would give the opportunity to many airpower advocates to express their opinions and beliefs about doctrinal issues, including strategic analysis and tactical procedures or techniques. Moreover, *Revista de Aeronáutica* would be the main forum to present and propose organizational issues and suggestions to be applied in developing airpower in Spain. In fact, the review entailed both civil and military aviation, as well as those matters related to aeronautical developments like infrastructure, national industry, meteorology, national and international competitions, private aviation, etc.

Overall, this publication shows how well the Spanish aeronautical community was informed about technological advances, airpower theories and doctrines, and tactics, techniques and procedures used by other countries around the world. Many of its articles used data and examples extracted from foreign publications and other sources. In fact, the

small scope of aeronautical activities in Spain would move many air enthusiasts to comment and analyze about airpower progress in the international environment.

Without any doubt, the issues most discussed in the periodical were the doctrine of employment and organization of airpower in Spain. Special attention was paid to governmental decisions related to organizational steps adopted across the years. In addition, in bringing up those decisions, many articles were written trying to influence decision-makers, especially once the air service had officially attained its virtual independence. It is then when interservice rivalry issues came up and opposing arguments are evident in the periodical. As a matter of fact, articles were written not only by air enthusiasts but also by army and navy officers with flying experience that would argue for the need of an independent air service, or the unification of auxiliary aviation under a single command structure.

In brief, the review was an open forum to discuss aeronautical issues, and its pages were used to define, clarify, describe, and propose concepts, ideas, techniques, and procedures used across the world to be applied in developing an independent air service in Spain. For that reason, *Revista de Aeronáutica* may be considered as an “informal body of doctrine” of Spanish airpower in the years of the Second Republic. What follows is a selection of some of the most remarkable articles, including title, author’s name, short description, and date of publication.

“La reorganización de nuestra aviación militar,” Editorial, June 1932. Comments about the importance of some organizational steps adopted recently (independence of the air service becoming the fifth army branch).

“El desarme y la Aviación,” Editorial, June 1932. Description of Spanish official position on the League of Nations initiatives to forbid aviation.

“España vista desde el aire,” Ruiz de Alda, August 1932. Transcription of a lecture given by Ruiz de Alda to a Catalonian economic and social association, in which the author makes a thorough analysis of the current airpower situation in Spain, including civil and commercial airlines, social air mindedness, national industry, and military aviation.

“Reorganización y nuevos presupuestos,” Editorial, September 1932. Comments about the new organizational project proposed by Manuel Azaña for restructuring national airpower.

“La hidroaviacion en España,” Capt. Manuel M. Merino, September 1932. Role of hydroplanes inside the air force. In considering the strategic environment, the author considers it essential to count on a great fleet of hydroplanes to contribute to national air defense. Some examples are given by analyzing Italian hydroplane forces.

“El problema aéreo en su aspecto defensivo,” Capt. Vicente Barrón, September 1932. Analysis of what should be the force structure, organization and resources dedicated to create an effective air defense system in Spain.

“Necesidad urgente de una reorganización de la Aeronáutica nacional,” Capt. Juan Aboal, January 1933. Complete analysis of current requirements to attend the reorganization of national airpower, including both civil and military aviation.

“Mando aéreo o mando terrestre,” Capt. Carlos Sartorius, February 1935. Discussion about suitability of airpower to exercise air control in colonial operations (in Ifni, Western Sahara, since 1934), such as Britain did in Iraq.

“Sobre la acción aérea en el mar,” Antonio Álvarez-Ossorio, Navy Officer, July-1935. This is one of the articles that form part of a long argument between Ossorio and Maj. Longoria. It constitutes one of the best examples of how interservice rivalry was present in those years. The article discusses the ability of airpower to affect naval operations, specifically by bombing and sinking naval ships. Longoria rapidly answered with his opinions in the same number under the title of “Contestacion obligada.”

“Comentarios,” Major Alejandro G. Spencer, May and November 1933. Under this title, Spencer responds to some comments expressed in other articles against airpower war doctrine and the decisiveness of aviation in future conflicts.

“Reorganizacion,” Editorial, May 1933. Analysis of the governmental decree by which the *Direccion General de Aeronáutica* was created.

“La organización de las fuerzas aéreas,” Major Luis Manzaneque, May 1933. Two pages were dedicated to describe a comprehensive organization of air forces, from the most elementary unit to air staff components.

“Hidroaviacion no es Aviación naval,” Capt. Manuel M. Merino, May 1933. Another example of interservice rivalry between the air force and the navy about who should fly and operate hydroplanes.

“Sobre la conveniencia de una concentración- Industrias aeronáuticas,” Alejandro G. Spencer, February 1933. Article about the current situation of national industry, technological problems, required budgets and procedures to prosecute acquisition programs.

“La reorganización de la Aeronáutica,” Editorial, July 1934. Commentaries about a new organizational step in which new hopes of success are expressed. Also indicated are the current requirements of national airpower.

“Bases de nuestra política militar,” Maj. Luis Manzaneque, April 1932. In this article Manzaneque express his views on what the Spanish military strategy should be and an adequate force structure in which airpower should receive special attention.

“La acción aérea independiente,” Maj. Francisco F. Longoria, November 1932. Longoria discusses in this article the role of airpower in the next conflict and what kind of aviation should be prioritized, whether bombers or fighters. He calls “arma aerea independiente” those units formed by the so-called battle aircraft, a heavy, armored bomber with long range and a great load of armament.

“Armada Aérea y aviaciones auxiliares,” Navy Officer Antonio Álvarez-Ossorio, January 1933. Opinions about what should be the future organization of the air force. In this article, Ossorio makes an analysis of different organizations adopted in countries like Japan, Italy, Britain, the USA, and France. His propositions seemed to be very influential in the decision adopted a few months later, when the *Direccion General de Aeronáutica* was created.

“La Aviación Militar,” Maj. Ángel Pastor, May 1933. Transcription of a lecture given to a high military education course by Pastor, who was by then Commander in Chief of the Air Military service (auxiliary aviation of the army). It represents a good description of what kind of conflict would be next, roles and missions to assign to airpower, and targets and armament to employ. In brief, a summary of the basic principles of airpower and air warfare is presented.

“*¿Aeromarina?*,” Major Luis Manzaneque, June 1933. An article in which Manzaneque analyzes again the strategic environment of Spain to determine how well airpower may contribute to secure national interests. In this case, he argues against Ossorio about the need for the Navy to have an auxiliary air force to protect lines of communication in the Mediterranean. Manzaneque considers that the air force could attend this mission from its own bases on the ground. Therefore, there was no necessity to divide airpower efforts or break the unity of command of airpower.

“*Organización de una Aviación de Guerra*,” Major Luis Manzaneque, April 1934. Manzaneque focuses his attention in this case on giving a comprehensive force structure and organization for military air forces to be employed in combat operations. He talks about basic combat units, auxiliary staffs and services, technical and logistic requirements, maintenance programs, and personnel issues like recruitment, auxiliary troops, pilots, and training schools.

“*Supremacía en el aire para defender la superficie*,” Major (Army) Carlos Martínez-Campos, October 1934. A good synthesis of different opinions about what should be the primary role of airpower, whether to act independently, to cooperate with other services, or to serve as an auxiliary service to navy and army forces. He shows his preference for maintaining auxiliary aviation and not to centralize all aviation means under the air force. This is another good example of interservice rivalry, in this case coming from the Army, and specifically from an artilleryman.

“*Preparación de la guerra aérea*,” (3 articles), Major Francisco F. Longoria, October-December 1935. In these three articles Longoria makes an exposition of the main characteristics and principles of air warfare, missions and roles of airpower, concept of

control of the air, and goals to achieve by employing airpower. In the second article, he analyzes different types of aircraft, their performance, armament, and characteristics. Bombers, fighters, and anti-aircraft artillery are analyzed to understand how they contribute to air warfare. Finally, he develops a study of the functions to perform by the air staff in planning, coordinating, and conducting air operations as well as logistical and support functions. The last article of this series deals directly with airpower doctrine and the great responsibility of the air staff in developing it.

“Opiniones francesas,” Major Luis Manzaneque, December 1935. Article in which Manzaneque analyzes some opinions of a French army general related to airpower organization in France. He compares those opinions with Spanish requirements.

“Aviación al servicio de los Ejércitos,” Gen (Army) Oswaldo Capaz, February 1936. An article in which Gen Capaz (one of the most famous *africanistas*—military commanders who fought the colonial war in Africa) describes what kind of missions could be performed by aviation in support of Army Divisions. In addition he gives a possible organization of aviation attached to army units, very similar to that used in Africa.

“Información Nacional,” Editorial, monthly. Each month, a compilation of the most significant news, facts, and achievements related to national airpower were reproduced. In these pages, official decrees, lectures, governmental messages, and other kinds of dispositions were also reproduced.

## ***Bibliography***

### **Books**

Arma de Aviación, Jefatura, Oficina de Mando- Instrucción, *Plan de Instrucción de las Unidades, 1935*. Madrid: C. Bermejo, 1935.

Arma de Aviación, Servicios de Instrucción. *Manual del Combatiente*. Madrid: Patronato de Huérfanos de Intendencia e Intervención Militar, 1933.

Aviación Militar. *Conferencias Teóricas*. Madrid: Talleres Tipograficos Stampa, 1925.

Bañón, Rafael and Barker, Thomas eds. *Armed Forces and Society in Spain. Past and Present*. New York: Social Science Monographs. Boulder: Distributed by Columbia University Press, 1988.

Buckley, John. *Air Power in the Age of Total War*. Bloomington, Indiana: Indiana University Press, 1999.

Cain, Anthony C. *Neither Decadent, nor Traitorous, nor Stupid: The French Air Force and Doctrine in the 1930s*. Ph.D. dissertation, Ohio State University, 2000.

Carr, A.R.M. "Spain. Rule by Generals." In *Soldiers and Governments, Nine Studies in Civil-Military Relations*, ed. Michael Howard. London: Eyre and Spottiswoode, 1957.

Flores, A and Cicuendez, J.M. *1913-1927 Guerra Aérea sobre el Marruecos Español, Imágenes de la Aeronáutica Española*. Madrid: Museo del Aire, 1990.

Goma, José. *Historia de la Aeronáutica Española* (2 vols.) Madrid: Prensa Española, 1946 and 1951.

*Historia de la Aviación Española*, 1<sup>st</sup> Ed. Madrid: Instituto de Historia y Cultura Aeronáutica (Spanish Cultural and Historical Institute of Aeronautics), 1988.

Manzaneque, Luis. *El Dominio del Aire y la Defensa Nacional*. Madrid: Agencia Española de Librería, 1931.

Meilinger, Philip S, *The Paths of Heaven: The Evolution of Airpower Theory*. School of Advanced Airpower Studies. Maxwell Air Force Base: AU Press, 1997.

Millet, Allan R. and Murray, Williamson. *Military Effectiveness. Volume II: The Interwar Period*. Boston: Allen & Unwin, 1988.

Ortega y Gasset, José. *Invertebrate Spain*. Translated by Mildred Adams. 1<sup>st</sup> Ed. New York: W.W. Norton & Company, 1937.

Payne, Stanley G. *Politics and the Military in Modern Spain*. Stanford, California: Stanford University Press, 1967.

Peers, Allison. *The Spanish Tragedy 1930-1936, Dictatorship, Republic, Chaos*. New York: Oxford University Press, 1936.

Preston, Paul. *Las tres Españas del 36*. Barcelona: Plaza & Janes Editores, S.A, 1999.

Sánchez Carmona, José, *El Infante D. Alfonso de Orleans, Biografía y Filosofía Aeronáutica*. Madrid: Instituto de Historia y Cultura Aeronáutica (Spanish Cultural and Historical Institute of Aeronautics,) 1991.

### **Periodicals**

Herrera, Emilio. "La Aviación Militar en el África Occidental." *Revista Aeroplano*(1995) n.13.

*Revista de Aeronáutica* (April 1932 through June 1936.)

Salas, Ramón "Proceso Organizativo del Servicio de Aviación." *Revista de Aeronáutica y Astronáutica*, May 1988.

Valverde, Miguel. "Un decenio de fértil actividad del pensamiento aeronáutico español" *Revista de Aeronáutica y Astronáutica*, May 1988.

### **Spanish Air Force Historical Archive Documents**

Aeronautic Section. Documents related to an official report proposing the *Assimilation of NCOs into the officer ranks in the Air Military Service and arguments against it*, 1927-1928.

Aeronautic Section. Official report about *Organization of the Aeronautic Military Service*, 1922.

Aeronautic Section. *Proyecto de Reorganización de la Sección y Dirección de Aeronáutica en un Centro único con el nombre de Dirección*. Signed by Gen Francisco Echague, as commander of the service, November 1919.

Aeronautic Service. *Official document # 1105*, signed by Col Moreno, as commander of the Aeronautic Military Service, April 17, 1918.

Aeronautic Service. Formal request from Ramón Franco, as commander of the service, addressing *Directorates Reorganization inside the Service*, May 1931.

Aeronautic Service. (Group designated to study the new organization of the Aeronautic Service). *Memoria y Bases para la Organización del Servicio de Aeronáutica*, 1918.

Army Central Staff (different directorates). Official report about *Desarrollo del Servicio de Aviacion*, May 1918.

Army Central Staff. Official reports of the 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> Directorates about *Bases para la Organización del Servicio de Aeronáutica*, 1918.

Junta Facultativa de Ingenieros. *Informe relativo al Cuestionario sobre Organización del Servicio de Aeronáutica Militar, Acuerdo 425*, Feb 18, 1918.

Ministry of War. *Decree of Organization*, by which all previous dispositions issued about Aeronautic organization are cancelled, May 13, 1931.

Ministry of War. Official decree about *Norms to Constitute and Regulate the Aviation Officer Corps*, July 08, 1931.

Ministry of War. *Official decree eliminating current air units and establishing a new regional force structure and organization*, June 23, 1936.

*Official decree by which the Ejercito del Aire is created*, August 1939.